UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

US EPA RECORDS CENTER REGION 5
437799

REPLY TO THE ATTENTION OF

MEMORANDUM

DATE:

SUBJECT: **ENFORCEMENT ACTION MEMORANDUM** - Request for Approval for Change in Scope at the Crawford Station Former MGP Site, Chicago, Illinois (Site ID # B5HK)

FROM: Ross del Rosario, Remedial Project Manager/On-Scene Coordinator
Remedial Response Branch #2 – Section #5

THRU: Samuel Borries, Chief
Emergency Response Branch #2

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

The purpose of this Amended Action Memorandum is to request and document your approval of a change in scope to add an additional area (Parcel L) for cleanup under an ongoing time-critical removal action at the former Crawford Station Former MGP Site (Site) in Chicago, Illinois. The original action memorandum, dated October 12, 2011, described the removal action necessary to mitigate the immediate threats to public health and the environment posed by the presence of uncontrolled hazardous wastes on Parcels A, B, and O at the Site, including soils containing elevated levels of polynuclear aromatic hydrocarbons (PAH), and to document approval of the proposed time-critical removal action described herein.

The response action proposed herein will mitigate Site conditions by removal and off-site disposal of the contaminated soil from Parcel L, in addition to the contaminated soils in Parcels A, B, and O, which were addressed in the original action memorandum. The high levels of PAH in surface and sub-surface soil at concentrations that exceed EPA Removal Action Levels (RALs) and the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO), the Site's plans for future construction, and the industrial/commercial use of the property requires that this action be classified as a time-critical removal. Additional activities will include determination of the extent of the contamination, the implementation of an air monitoring plan, water management, and a Site contingency plan. The removal action was originally projected to take 12 months to complete. The project, as amended, will require an additional 16 months beyond the original 12-month completion date. This removal action will be completed by the potentially responsible party (PRP) pursuant to an Administrative Order on Consent (AOC), as amended.

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The Crawford Station Former MGP Site is not on the National Priorities List (NPL) and there are no nationally significant or precedent setting issues associated with this Site.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILN000510192
RCRA ID: None
STATE ID: None
Category: Time-Critical Removal

A. Site Description

1. Physical Location and Description

Please refer to the original Action Memorandum approved on October 12, 2011 (see Attachment 1).

2. Site Background

Please refer to the original Action Memorandum approved on October 12, 2011.

3. Site Characteristics (Removal Action Area)

Please refer to the original Action Memorandum approved on October 12, 2011.

The Site has been subdivided into 21 parcels, designated as Parcels A through U. The key parcels that are the subject of the original action memorandum (i.e., the removal action area or RAA) are Parcels A, B, and O, located in the southwest corner of the Site. Parcel L is the focus of this action memorandum and is located in the central portion of the Site. Parcels A, B, and O, altogether comprise approximately 14 acres, while Parcel L is approximately 35 acres. A key feature of Parcel L is that the former West Fork of the South Branch of the Chicago River historically traversed this parcel diagonally from the southwest to the northeast. According to available data, portions of the former West Fork contain fill to depths of 19-20 feet, with concentrations of manufactured gas plant (MGP) residuals detected along and/or adjacent to the former channel.

B. Site Evaluation

Please refer to the original Action Memorandum approved on October 12, 2011.

Specific to Parcel L, previous investigations included soil surveys conducted during June 2002, April 2003, and June 2012. Similar to conditions found at Parcels A, B, and O, contaminants in soil at Parcel L indicated elevated levels of PAHs shown in the Remedial Action Work Plan – Addendum 1 (Attachment 2) exceeding applicable State TACO screening levels and/or EPA's RALs. Surface soil samples collected during the April 2003 survey showed elevated readings of

benzo(a)anthracene (23 mg/kg), benzo(b)fluoranthene, (13 mg/kg), and benzo(a)pyrene (16 mg/kg). Soil samples taken during the June 2012 survey also revealed that default values for soil attenuation capacity (6,000 mg/kg total petroleum hydrocarbons) were exceeded, with readings of 24,080 mg/kg and 19,000 mg/kg. Exceedance of the soil attenuation capacity provides evidence that MGP source material is present and in sufficiently elevated concentrations that the potential of contaminant migration and associated risks to receptors is present.

III. THREATS TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions at the Crawford Station Site present an imminent and substantial threat to the public health, or welfare, and the environment, and meet the criteria for a time-critical removal action as provided for in the National Contingency Plan (NCP) Section 300.415(b) (2). These criteria are documented in the Action Memorandum signed on October 12, 2011.

IV. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the suspected hazardous substances on Site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

The PRP shall implement the EPA-approved Removal Action Work Plan for Crawford Station MGP Site, as amended (Revision 1) on October 19, 2012, incorporating the work required on Parcel L. Main components of the approved amended work plan include the following provisions:

- Site Preparation, including clearing and grubbing
- Targeted excavation within defined RAA (Figure 3 of work plan)
- Transportation and off-site disposal of excavated material
- Backfilling with clean fill
- Compliance with State and Local Requirements
- Construction Quality Assurance Measures such as
    - Air Monitoring
    - Fugitive Emissions Management Plan
    - Health and Safety Plan
    - Sampling and Analysis Plan
- Schedule for Completion
- Submission of Completion Report

In addition, the RPM has planned for the provision of post-removal Site control consistent with the provisions of Section 300.415(l) of the NCP. It is anticipated that any post-removal Site control will be undertaken by the PRP.

The activities described in this memorandum will require an estimated 16 months beyond the original 12-month completion date of the original removal action. Based on the additional volume of source material to be disposed of in Parcel L, it is estimated the revised cost of completing the removal action to be approximately $45,000,000.

The response actions described in this memorandum directly address the actual or threatened release at the Site of a hazardous substance, or of a pollutant, or of a contaminant which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

All hazardous substances, pollutants or contaminants removed off Site pursuant to this removal action for treatment, storage, and disposal will be treated, stored, or disposed of at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 CFR 300.440.

Applicable or Relevant and Appropriate Requirements

All Federal and State applicable, relevant, and appropriate requirements (ARARs) will be complied with to the extent practicable.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented on Site, and the potential exposure pathways to nearby populations described in Section II, III, and IV, and V above, actual or threatened releases of hazardous substances and pollutants or contaminants from this Site, if not addressed by implementing or delaying the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment, increasing the potential that hazardous substances will be released, thereby threatening the environment and the health and welfare of nearby residents and other persons who are in proximity to the Site.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Enforcement Confidential Addendum.

IX. RECOMMENDATION

This decision document represents the selected removal action for the former Crawford Station MGP Site, located in Chicago, Illinois, developed in accordance with CERLCA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record (Attachment 3) for the Site. Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action and I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE: _____ DATE: 11-19-12
Director, Superfund Division

DISAPPROVE:_____ DATE: _____
Director, Superfund Division

Enforcement Addendum

Attachments

1. Enforcement Action Memorandum (10/12/11)
2. Approved RAWP, Addendum 1 – Revision 1 (10/19/12)
3. Administrative Record Index (revised)

cc: S. Fielding, U.S. EPA, 5104A
B. Everetts, Illinois EPA, **w/o Enf. Addendum**
S. Davis, Illinois DNR, **w/o Enf. Addendum**
L. Nelson, U.S. Department of Interior, **w/o Enf. Attachment**
(email: Lindy_Nelson@ios.doi.gov)
V. Darby U.S. DOI, **w/o Enf. Addendum**
(email: valincia_Darby@ios.doi.gov)

BCC PAGE

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NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ENFORCEMENT ADDENDUM
4 PAGES
CRAWFORD STATION SITE
CHICAGO, ILLINOIS

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NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

Attachment 1

Action Memorandum dated October 12, 2011

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

US EPA RECORDS CENTER REGION 5

413671

REPLY TO THE ATTENTION OF:

MEMORANDUM

DATE: OCT

SUBJECT: **ENFORCEMENT ACTION MEMORANDUM** - Determination of Threat to Public Health or Welfare or the Environment at the Crawford Station Former MGP Site, Chicago, Illinois (Site ID # B5HK)

FROM: Ross del Rosario, Remedial Project Manager/On-Scene Coordinator
Remedial Response Branch #2 – Section #5

THRU: Linda M. Nachowicz, Chief
Emergency Response Branch #2

TO: Richard C. Karl, Director
Superfund Division1

I. PURPOSE

The purpose of this Action Memorandum is to document the determination of an imminent and substantial threat to public health and the environment at the former Crawford Station MGP Site (Site) in Chicago, Illinois. The proposed removal action is necessary to mitigate the immediate threat to public health and the environment posed by the presence of uncontrolled hazardous wastes on site, including soils containing elevated levels of polynuclear aromatic hydrocarbons (PAH), and to document approval of the proposed time-critical removal action described herein.

The response action proposed herein will mitigate Site conditions by removal and off-site disposal of the contaminated soil. The high levels of PAH in surface and sub-surface soil at concentrations that exceed U.S. EPA Removal Action Levels (RALs) and the Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO), the Site's plans for future construction, and the industrial/commercial use of the property requires that this action be classified as a time-critical removal. Additional activities will include determination of the extent of the contamination, the implementation of an air monitoring plan, water management, and a Site contingency plan. The project will require an estimated 12 months to complete. This removal action will be completed by the potentially responsible party (PRP) pursuant to an Administrative Order on Consent (AOC).

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The Crawford Station Site is not on the National Priorities List (NPL) and there are no nationally significant or precedent setting issues associated with this Site.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILN000510192
RCRA ID: None
STATE ID: None
Category: Time-Critical Removal

Physical Location and Description

The former Crawford Station MGP Site is located in the City of Chicago, in the County of Cook. The site address is 3500 South Pulaski Road, Chicago, Illinois. The geographic coordinates of the site are 41° 29' 29" north latitude and -87° 44' 14" west longitude (see Figure 1). The Site is approximately 260 acres, of which 107 acres is currently owned by the PRP, Peoples Gas Light and Coke Company (Peoples Gas). The portion owned by Peoples Gas is currently used as a natural gas regulating and metering facility. The Site is bounded on the south by the Chicago Sanitary and Ship Canal (the "Canal"), on the north by the Chicago and Illinois Western Railroad, on the west by the Chicago and Western Indiana Belt Line Railroad, and to the east by Pulaski Road. Various commercial/industrial buildings and uncovered storage areas exist on the remainder of the Site (see Figure 2).

The area surrounding the Crawford Station MGP Site was screened for Environmental Justice (EJ) concerns using U.S. EPA Region 5's EJ Assist Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSEAT)). Census tracts with a score of 1, 2, or 3 are considered to be high-priority potential EJ areas of concern according to U.S. EPA Region 5. The Site is in a census tract with a score of 1 (see Attachment 3). Therefore, Region 5 considers this Site to be a high-priority potential EJ area of concern.

B. Site Background

In 1921, the Koppers Company of Pittsburgh and Peoples Gas (n/k/a Integrys) entered into an agreement whereby Koppers built, financed, and operated a by-product coke plant at the Crawford Station. Peoples Gas bought the gas and coke manufactured at the plant for distribution to consumers. Peoples Gas then acquired the facility in 1928. By the late 1930s, the Crawford Station facility produced three types of gas: coke oven gas, carbureted water gas, and reformed natural gas. During the 1930s, several additions and modifications were made to the plant, including construction of a light oil refining plant, addition of liquefied petroleum ("LP") gas peak shaving facilities, and conversion of five of the nine water gas sets to produce reformed natural gas and later oil gas. Production was halted temporarily between 1958 and 1962 and permanently after 1963. The Crawford Station was retired in 1965. Dismantling of the Crawford Station began in 1956 starting with portions of the coke oven plant. The remainder of the Crawford Station was dismantled in 1965. Peoples Gas eventually sold 146 acres of the Crawford Station property to First Industrial Realty Company in 1966.

C. Site Characteristics (Removal Action Area)

The Site has been subdivided into 21 parcels, designated as Parcels A through U. The 3 key parcels that are the subject of this action memo are Parcels A, B, and O, located in the southwest corner of the Site and is approximately 14 acres (i.e., the removal action area or RAA). Key features of the RAA are as follows:

- Generally unimproved open land with grass cover and some scrub trees. Surface topography is generally flat; however a slight depression exists along the approximate boundary of Parcels A & B and Parcel O.

- Natural gas utilities within the removal area and adjacent zones include a series of four high pressure gas mains ranging in size from 24-inch to 42-inch diameter. The gas lines traverse Parcel O and run parallel to the Chicago Sanitary and Ship Canal. At the western limits of Parcel O, two small gas regulator structures are present.

- A large sewer main, owned by the City of Chicago, traverses Parcels B and O in a north to south orientation. The sewer is 18 feet wide by 14 feet 4-inches high and has a cover depth of approximately six feet in the vicinity of the removal area.

- Small storage shed (metal structure) used by Peoples Gas for storage of empty drums. A private access roadway that traverses Parcel O is used by PGL to access the pipeline corridor.

D. Site Evaluation

Various investigations were conducted at the Site by several environmental consultants over the years. An environmental assessment of the Site was performed in 1992 and intrusive site investigations were initiated in 2001. These investigations indicated the presence of volatile organic compounds (VOCs), PAHs, metals, and cyanide in groundwater and soil samples collected in various locations at the Site. Impacts were observed below the water table at depths of up to 26 feet in various borings. These impacts include staining, odors, tar saturated soil, and tar in fractures. Based on results from investigations performed to date, the thickness of the fill layer ranges from 0 to 11 feet across the Site. Evidence of impacts, including tar, tar in fractures, tar-coated sand, naphthalene-type odor, and sheen, have been observed at depths of up to 26 feet at various locations at the Site. VOCs, PAHs, metals, and cyanide were detected in soil samples collected in various locations at the Site. MGP-related constituents were also shown to be migrating mainly through fractures in the brown/gray silty clay unit of the aquifer below the Site.

Specific to Parcels A, B, and O, site investigations conducted in 2001 and 2002 revealed this area to be a source of contamination at the Site. Specifically, the RAA was characterized by a hard layer of tar saturated soils at ground surface to about 4 feet below ground surface (bgs). In addition, investigation findings indicated the presence of tar appearing in fractures in the brown/grey silty clay. The tar in fractures was noted as occurring at a depth of 8 to 13 feet bgs and averaging about 2 feet thick;

In October 2008, U.S. EPA and Integrys entered into an Administrative Order on Consent for Integrys to conduct a remedial investigation and feasibility study of the Site. It was apparent from the contaminants found in the soil and groundwater (e.g., BTEX and PAH), described in the 2001 and 2002 site investigations, that this was the result of past MGP operations and that the RAA is a continuing source of the contamination.

III. THREATS TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions at the Crawford Station Site present an imminent and substantial threat to the public health, or welfare, and the environment, and meet the criteria for a time-critical removal action as provided for in the National Contingency Plan (NCP) Section 300.415(b) (2). These criteria include, but are not limited to, the following:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substance or pollutants or contaminants.

A potential exposure risk is present in the RAA because of the existence of exposed MGP residual materials, including weathered tar at ground surface in multiple locations. Analysis of surface soil samples taken in the RAA during the 2001 investigation (see Attachment 4) indicated the presence of PAHs exceeding the State's TACO Tier 1 screening criteria for soil ingestion and corresponding Superfund RALs, as summarized in the following table:

Compound Name	TACO Tier 1 Screening Level	RAL	Reported Value (mg/kg)
Benzo(a)anthracene	8	230	1,960
Benzo(b)fluoranthene	8	230	1,150
Benzo(a)pyrene	0.8	23	895

Both TACO Tier 1 screening levels and the RALs were based on an industrial/commercial use scenario. Also, elevated benzene levels were found in subsurface soil in this area, ranging in concentration from 0.324 to 519 milligrams per kilogram (mg/kg). For comparison, the benzene TACO Tier I screening criteria for industrial/commercial soil ingestion is 100 mg/kg, while the corresponding RAL is 600 mg/kg. Acute inhalation exposure to PAHs such as benzo(a) anthracene, benzo(b) fluoranthene, or benzo(a) pyrene may cause eye, skin, and respiratory tract irritation. Repeated exposures to benzo(a)pyrene may result in an allergic skin reaction. Ingestion may result in irritation of the digestive tract. Long term chronic exposure to these compounds may cause reproductive or fetal effects. U.S. EPA has categorized these compounds as possible human carcinogens (Group 2A or 2B), with all 3 shown to be mutagenic in laboratory experiments. Benzene is a known human carcinogen. Long-term exposure to high levels of this compound in the air can lead to leukemia and cancers of the blood-forming organs.

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.

MGP residuals in soil were identified at the surface, containing elevated levels of contaminants exceeding the State's TACO cleanup levels and EPA RALs as described above. Contaminated soil potentially could come in contact with people working nearby (this being an industrial/commercial park). Also, an occasional trespasser may come in contact with contaminated soil in the surface either through dermal contact or inhalation. Typical security measures, including fencing, are currently employed to limit potential exposure.

Actual or potential contamination of drinking water supplies or sensitive ecosystems.

Neither the Canal nor the groundwater underneath the Site is used as a drinking water source at this time. Nor is it within a sensitive ecosystem. However, sediments in the Canal did reveal the presence of contaminants found in the RAA (e.g., PAHs), although the exact exposure pathway(s) for contaminants to migrate to the sediments is unknown at this time. It is not known at this point whether the levels of contaminants in the sediments have any adverse impact to the surrounding ecosystem. While this segment of the canal does not appear to be used for recreational fishing or boating, it is conceivable that such activities may be occurring upstream and/or downstream from this segment. Also, the Canal is a navigable waterbody that is used for commercial shipping between Lake Michigan and the Mississippi River. Possible dermal contact or ingestion of contaminated sediment could occur given the presence of human activity in the Canal.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

Migration could occur as a result of wind action during dry periods, which could pose a breathing hazard. Such wind action could also lead to deposition of materials in uncontaminated areas. Migration of contaminants in surface soil could also occur through surface water flow or groundwater flow during wet periods, due to the high levels of PAHs and benzene found in some of the samples.

IV. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the suspected hazardous substances on Site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

The PRP shall implement the U.S. EPA-approved Removal Action Work Plan for Crawford Station MGP Site (Revision 1), dated September 6, 2011. Main components of the approved work plan include the following provisions which require compliance with:

- Preliminary activities such as site security and controls
- Site Preparation, including clearing and grubbing
- Targeted excavation within defined RAA (Figure 3 of work plan)
- Transportation and off-site disposal of excavated material
- Backfilling with clean fill
- Compliance with State and Local Requirements
- Construction Quality Assurance Measures such as
    - Air Monitoring
    - Fugitive Emissions Management Plan
    - Health and Safety Plan
    - Sampling and Analysis Plan
- Schedule for Completion
- Submission of Completion Report

In addition, the RPM has planned for the provision of post-removal Site control consistent with the provisions of Section 300.415(l) of the NCP. It is anticipated that any post-removal Site control will be undertaken by PRP.

The activities described in this memorandum will require an estimated 12 months to complete and cost approximately $15,000,000.

The response actions described in this memorandum directly address the actual or threatened release at the Site of a hazardous substance, or of a pollutant, or of a contaminant which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

All hazardous substances, pollutants or contaminants removed off Site pursuant to this removal action for treatment, storage, and disposal will be treated, stored, or disposed of at a facility in compliance, as determined by U.S. EPA, with the U.S. EPA Off-Site Rule, 40 CFR 300.440.

Applicable or Relevant and Appropriate Requirements

All Federal and State applicable, relevant, and appropriate requirements (ARARs) will be complied with to the extent practicable.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given the Site conditions, the nature of the hazardous substances and pollutants or contaminants documented on Site, and the potential exposure pathways to nearby populations described in Section II, III, and IV, and V above, actual or threatened releases of hazardous substances and pollutants or contaminants from this Site, if not addressed by implementing or delaying the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment, increasing the potential that hazardous substances will be released, thereby threatening the environment and the health and welfare of nearby residents and other persons who are in proximity to the Site.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this Site is contained in the Enforcement Confidential Addendum.

IX. RECOMMENDATION

This decision document represents the selected removal action for the former Crawford Station MGP Site, located in Chicago, Illinois, developed in accordance with CERLCA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the Site. Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action and I recommend your approval of the proposed removal action. You may indicate your decision by signing below.

APPROVE: _____ DATE: 10/12/11
for Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Director, Superfund Division

Enforcement Addendum

Attachments

1. Administrative Record Index
2. Site Location/Map (Figs. 1 & 2)
3. Environmental Justice Map
4. Soil Sampling Results (2001)

cc: S. Fielding, U.S. EPA, 5203-G
B. Everetts, Illinois EPA, **w/o Enf. Addendum**
S. Davis, Illinois DNR, **w/o Enf. Addendum**
M. Chezik , DOI, **w/o Enf. Addendum**

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ENFORCEMENT ADDENDUM
1 PAGE
CRAWFORD STATION SITE
CHICAGO, ILLINOIS

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ATTACHMENT 1

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
CRAWFORD STATION FORMER MGP SITE
CHICAGO, COOK COUNTY, ILLINOIS

ORIGINAL
OCTOBER 12, 2011
(SDMS ID: 405568)

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	07/00/01	Burns & McDonnell	The Peoples Gas Light and Coke Company	Site Investigation Report for the Former Crawford Station Manufactured Gas Plant Properties A & B (XTRA Intermodal) **(SDMS ID: 405566)**	47
2	06/00/02	Burns & McDonnell	The Peoples Gas Light and Coke Company	Site Investigation Report for the Former Crawford Station Manufactured Gas Plant Property O **(SDMS ID: 405565)**	30
3	10/12/11	del Rosario, R., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or Welfare at the Crawford Station MGP Site (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED) **(SDMS ID: 405567)**	16

UPDATE #1
NOVEMBER 5, 2012

1	10/19/12	Natural Resource Technology	U.S. EPA	Removal Action Work Plan Addendum 1 for the Former Crawford Station MGP Site (Revision 1)	233
2	11/01/12	del Rosario, R., U.S. EPA	Prasad, N., Integrys Business Support, LLC	Letter re: U.S. EPA Approval of the Removal Action Work Plan Addendum 1 (Revision 1) for the Former Crawford Station MGP Site	1
3	00/00/00	del Rosario, R., U.S. EPA	Karl, R., U.S. EPA	Enforcement Action Memorandum: Request for Approval for Change in Scope at the Crawford Station Former MGP Site **(PENDING)**	

Site Location

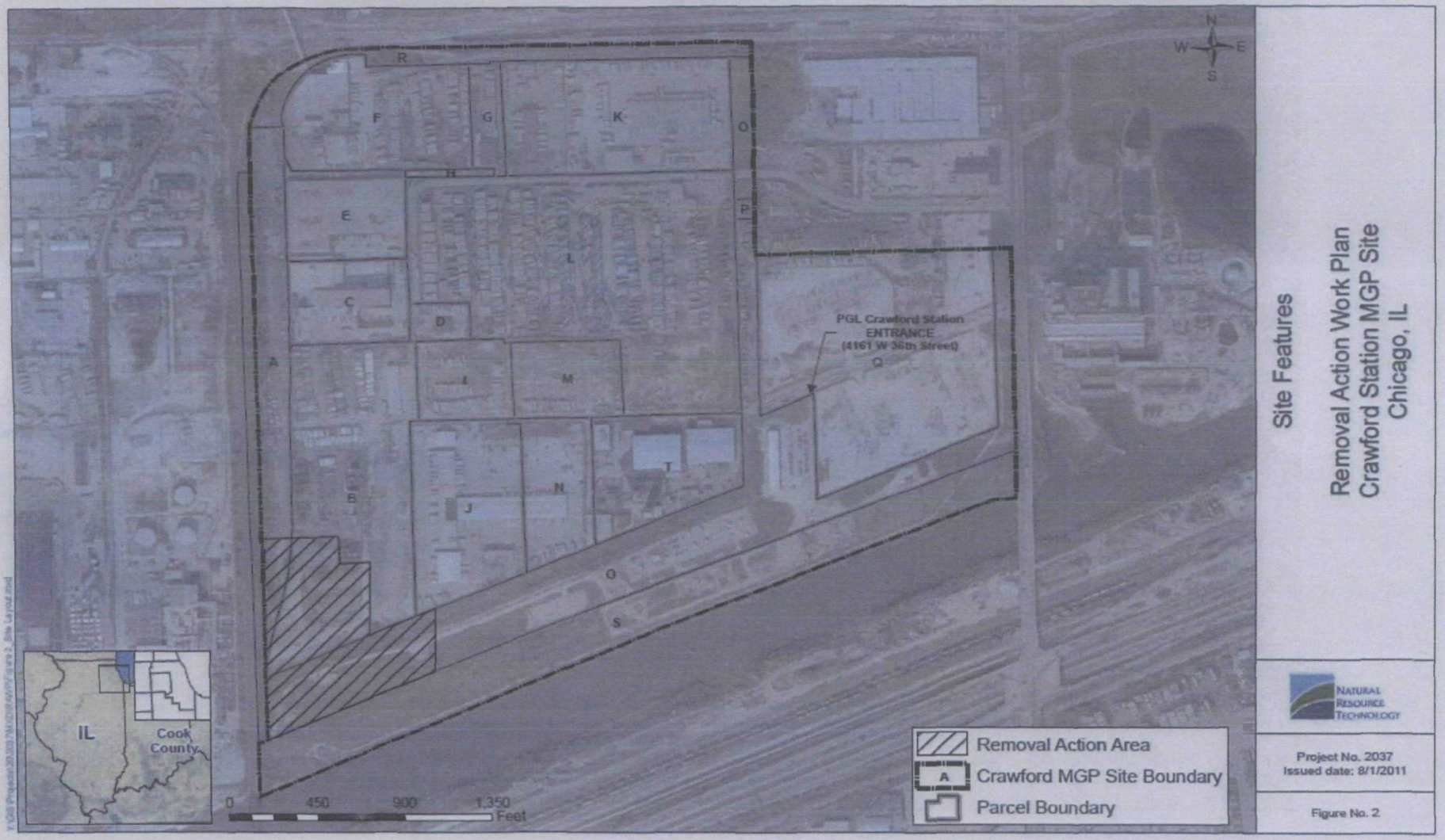
Crawford Station MGP Site
3500 South Pulaski Road
Chicago, Illinois

0 0.25 0.5 0.75 1 Miles

Natural Resource Technology

Project No. 2037
Issued date: 7/13/2011

Figure No. 1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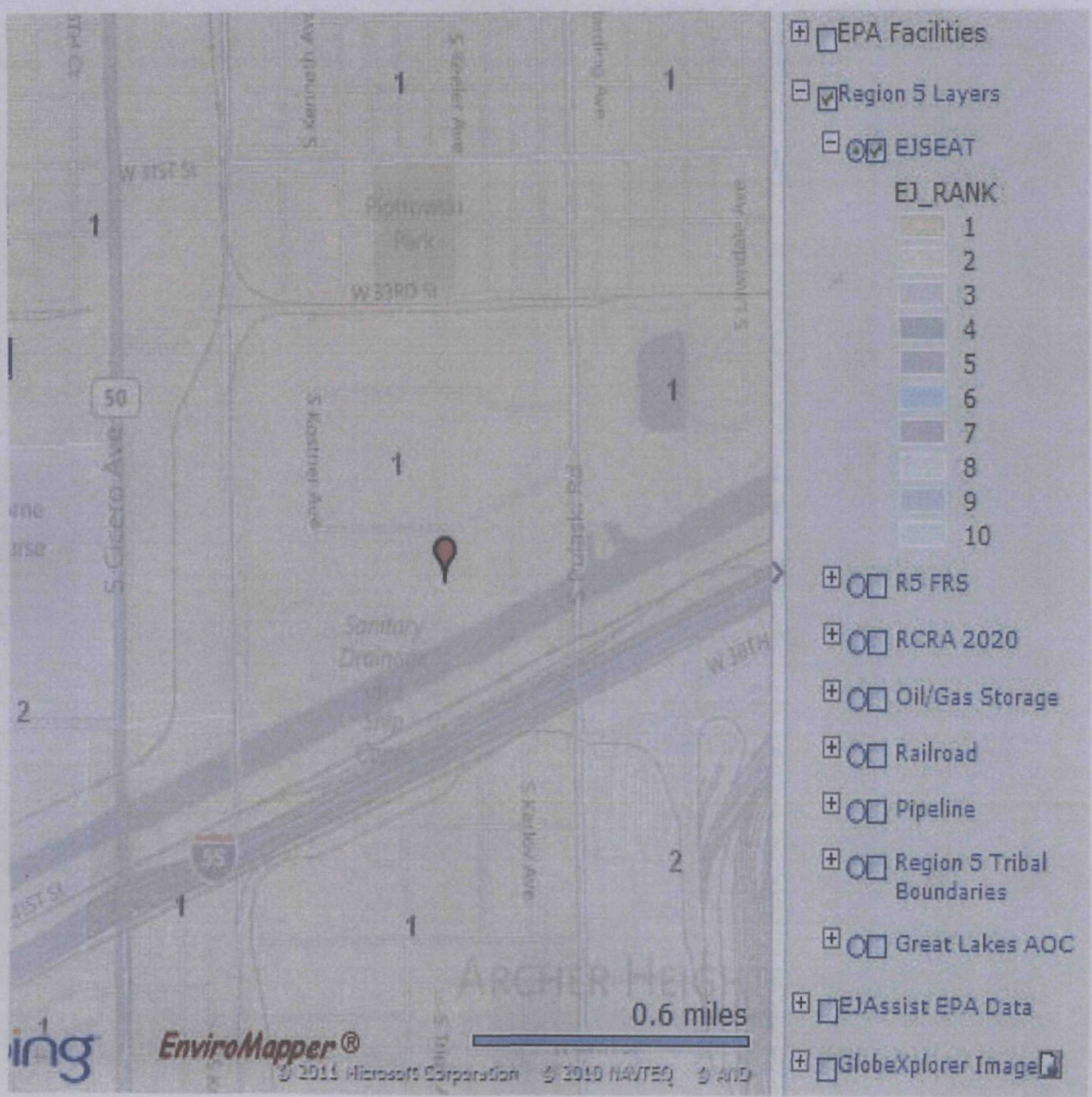
Removal Action Area
A
Crawford MGP Site Boundary
Parcel Boundary
Site Features
Removal Action Work Plan
Crawford Station MGP Site
Chicago, IL
Natural Resource Technology
Project No. 2037
Issued date: 8/1/2011
Figure No. 2

Attachment 3

Crawford Station MGP Site Map Showing EJ SEAT Values For Surrounding Area



Attachment 4

Soil Sampling Result from 2001 Site Investigation
Note: Exceedances of TACO Tier 1 Screening Levels are in bold

Table 11 (Continued)
Soil Ingestion Exposure Route (0-3' Below Ground Surface)
Industrial/Commercial–Tier I Screening
Crawford Station Properties A & B

Compound/Analyte	Tier I Screening Level	Sample Location and Depth (ft.bgs)/Concentration				
		SP001-001 3"-6"	SP002-001 0-1'	SP003-001 2'-3'	SP004-001 0-3'	SP005-001 0-1'
		WT~5' bgs	WT~8' bgs	WT~8' bgs	WT~8' bgs	WT~8' bgs
TCL SVOCs , continued (mg/kg)						
Dimethyl phthalate	—	0.330 U	50.0 U	50.0 U	50.0 U	0.330 U
2,4-Dinitrotoluene*	8.4	0.330 U	50.0 U	50.0 U	50.0 U	0.330 U
2,6-Dinitrotoluene*	8.4	0.330 U	50.0 U	50.0 U	50.0 U	0.330 U
Di-n-octyl phthalate	41,000	0.330 U	50.0 U	50.0 U	50.0 U	0.330 U
Hexachlorobenzene*	4	0.330 U	50.0 U	50.0 U	50.0 U	0.330 U
Hexachlorobutadiene	—	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
Hexachlorocyclopentadiene	14,000	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
Hexachloroethane	2,000	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
Isophorone	410,000	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
2-Methylnaphthalene	—	0.565	1,150 J	3,950 J	82.4 J	4.18
2-Nitroaniline	—	1.6 U	50.0 U	50.0 U	50.0 U	1.60 U
3-Nitroaniline	—	1.6 U	50.0 U	50.0 U	50.0 U	1.60 U
4-Nitroaniline	—	1.6 U	50.0 U	50.0 U	50.0 U	1.60 U
Nitrobenzene	1,000	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
N-Nitrosodimethylamine	—	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
N-nitrosodi-n-propylamine*	0.8	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
N-nitrosodiphenylamine	1,200	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
1,2,4-Trichlorobenzene	20,000	0.33 U	50.0 U	50.0 U	50.0 U	0.330 U
Acenaphthene	120,000	0.33 U	138 J	421 J	50.0 U	1.53
Acenaphthylene	—	0.856	1,580 J	5,180 J	244 J	12.9
Anthracene	610,000	0.562	1,490 J	4,010 J	343 J	15.7
Benzo(a)anthracene	8	2.64	1,960 J	4,140 J	897 J	31.2
Benzo(b)fluoranthene	8	1.70	1,180 J	2,170 J	249 J	27.8
Benzo(k)fluoranthene	78	1.31	978 J	1,900 J	331 J	23.4
Benzo(g,h,i)perylene	—	0.526	166 J	311 J	71.4 J	2.290
Benzo(a)pyrene	0.8	1.49	838 J	1,680 J	288 J	28.5
Chrysene	780	2.72	1,820 J	3,480 J	527 J	43.4
Dibenzo(a,h)anthracene*	0.8	0.33 U	86.5 U	166 J	50.0 U	0.694
Fluoranthene	82,000	3.59	4,530 J	9,500 J	1,120 J	68.6
Fluorene	82,000	0.33 U	1,830 J	6,020 J	333 J	9.51
Indeno(1,2,3-cd)pyrene	8	0.555	215 J	391 J	89.1 J	1.57
Naphthalene	82,000	1.53	4,980 J	22,400 J	177 J	3.67
Phenanthrene	—	2.34	5,780 J	13,800 J	1,020 J	49.7
Pyrene	61,000	3.32	2,970 J	6,200 J	789 J	64.2
Priority Pollutant Metals and Total Cyanide (mg/kg)						
Antimony	820	14 U	12 U	14 U	14 U	14 U
Arsenic	3	4.3	5.8	19	13	17
Beryllium	1	1	0.47	1.1	0.94	1.1
Cadmium	2,000	1 U	1 U	1 U	14	2.4
Chromium	10,000	8.6	3	5.3	14	54
Copper	82,000	48	22	65	200	65
Lead	400	100	21	439	180	89
Mercury	610	1.3	0.21	5.8	0.99	1.2
Nickel	41,000	22	18	30	18	43
Selenium	10,000	3.4	2.1	5.6	4.1	6.3
Silver	10,000	2 U	2 U	2 U	2.3 U	2.4 U
Thallium	160	2 U	2 U	2 U	2 U	2 U
Zinc	610,000	140	19	160	200	130
Total Cyanide	41,000	0.50 U	4.01	2.5 U	7.9	68.9

Notes:

(1) U - Indicates compound/analyte was analyzed for but not detected, the associated value is the sample reporting limit.

(2) J - Indicates an estimated value.

(3) WT~# bgs - Water table is approximately (#) feet below ground surface.

(4) Shaded values exceed Tier 1 screening levels.

(5) — Toxicity criteria not available for ingestion exposure route (Illinois EPA 2001).

(6) bgs-below ground surface

(7) * Non-detect value exceeds TACO Tier 1 level for compound. Non-detect values are not highlighted.

(8) NA – Not Analyzed

Attachment 2

Approved Removal Action Work Plan (w/o attachments)
Addendum 1 – Revision 1 (October 19, 2012)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

November 1, 2012 SR-6J

Naren M. Prasad, P.E.
Senior Environmental Engineer
Integrys Business Support, LLC
130 East Randolph Drive, 22nd Floor
Chicago, Illinois 60601

Re: Administrative Order on Consent
Former Crawford Station MGP – Removal Action Work Plan – Addendum 1 (Rev. 1)

Dear Mr. Prasad

The U.S. Environmental Protection Agency (EPA), with assistance from the Illinois Environmental Protection Agency, has reviewed your response, dated October 19, 2012, regarding a proposed revision to the approved removal action work plan (RAWP) dated September 6, 2011. Primarily, you requested that Parcel L be included as part of the removal action area. Based on our review, we have determined your response to EPA's comment letter of September 19, 2012 to be acceptable. Therefore, the revised document, dated October 19, 2012, is approved, pursuant to Section XXV, Paragraph 66 of the Administrative Order of Consent (Docket No. V-W-11-C-981).

Your attention to this matter is appreciated. If you have any questions, kindly bring it to my attention. I can be reached at 312-886-6195.

Sincerely,

Ross del Rosario
Remedial Project Manager

CC: Doyle Wilson, IEPA
Peter Felitti, ORC

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REMOVAL ACTION WORK PLAN
ADDENDUM 1

THE PEOPLES GAS LIGHT AND COKE COMPANY
FORMER CRAWFORD STATION MGP SITE
CHICAGO, ILLINOIS

CERCLA Docket No. V-W-11-C-981
CERCLIS ID – ILN000510192

NRT Project No. 2037

Prepared For:

INTEGRYS BUSINESS SUPPORT, LLC
130 E. Randolph Street, 22nd Floor
Chicago, IL 60601

Prepared By:

Natural Resource Technology, Inc.
300 S. Wacker Drive, Suite 2050
Chicago, IL 60606

Revision 1
October 19, 2012

John M. Nardozzi, PE
Principal Engineer

Timothy B. Norris, PG
Geologist

Joseph R. Ridgway, PE
Project Engineer

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FIGURES

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APPENDICES

1 INTRODUCTION

1.1 Overview

This document serves as Addendum Number 1 to the *Removal Action Work Plan (RAWP), Revision 1,* dated September 6, 2011 *(RAWP Rev. 1)* and details the expanded source material removal scheduled for the Parcel L Removal Action Area (Parcel L RAA). Parcel L is an approximate 35-acre parcel located in the central portion of the former Crawford Station Manufactured Gas Plant (MGP) site in Chicago, Illinois (Figure 1). Peoples Gas Light and Coke Company (PGL), a subsidiary of Integrys Energy Group, owned the former MGP. Integrys Business Support, LLC (IBS) will continue to provide oversight of the expanded removal action on behalf of PGL.

MGP residuals meeting the classification of source material were identified in surface and subsurface soils within the proposed Parcel L RAA. A potential exposure risk is present because of the existence of MGP source material in surface soils at multiple locations; surface conditions at Parcel L consist of loosely packed gravel that can easily be disturbed. Further, subsurface soils contain high concentrations of contaminants consistent with the presence of MGP source material and may impact other receptors.

Time Critical Removal Action activities were was initiated at the Crawford Station MGP site in January 2012 on Parcels A, B & O pursuant to a Remedial Action Work Plan approved by the USEPA on September 8, 2011. Although a complete Remedial Investigation/Feasibility Study (RI/FS) has not been completed to-date, preliminary investigation steps identified MGP source material in surficial and subsurface soils on Parcel L of the Crawford Station MGP site. Accordingly, this Addendum has been prepared to address the need for source material removal on Parcel L as a continuation of the existing Time Critical Removal Action process.

This RAWP Addendum, prepared pursuant to the Administrative Settlement Agreement and Order on Consent for Removal Action, Docket No. V-W-11-C-981, dated October 12, 2011 (Settlement Agreement), outlines the scope of the proposed removal action to be undertaken on Parcel L as a Time Critical Removal Action. This removal action is focused on removing MGP residuals that have been characterized as source material that pose a potential exposure risk. This portion of the removal action encompasses only one portion of the Crawford Station MGP site and is intended as an interim action to address near surface and subsurface MGP source material. IBS intends to accomplish substantial work on the referenced parcel, such that the removal action will contribute to the overall Site remediation goals.

1.2 Project Background Information

See RAWP Rev. 1, Section 1.2, page 2 for project background information. Specific location information for Parcel L RAA is as follows.

Geographic Coordinates:	Lat. 41° 49' 47.00" N Long. 87° 43' 57.30" W
Street Address:	4201 West 35th Place, Chicago, IL

1.3 Site History

See RAWP Rev. 1, Section 1.3, page 3 for Site history.

1.4 Site Description

See RAWP Rev. 1, Section 1.4, page 3 for overall Site description.

Parcel L comprises approximately 35 acres of land located in the central portion of the Crawford Station MGP site. The location of the proposed Parcel L RAA is presented on Figure 2. Land use of the surrounding area is presented in Figure 3.

1.5 Previous Investigations

Refer to the *Completion Report, Revision 0*, dated December 23, 2011 (Completion Report Rev. 0) for a compilation of previous investigation activity and findings. Section 5 of the Completion Report Rev. 0 (page 84) provides a list of the prior environmental reports and documents pertaining to the Crawford Station MGP site.

Appendix A of this document contains copies of prior investigation data specific to Parcel L including soil boring logs, test pit logs, and laboratory analytical reports from earlier investigations conducted by Burns & McDonnell.

1.6 Prior Remedial Activities

Remedial activities have been conducted on various portions of the Crawford Station MGP site. This expanded removal action will focus on the source material located on Parcel L. Based on assessment of historical information, no documented remedial activities have been performed on Parcel L. Surface features of the former MGP operations have been removed. Based on assessment of historical

information and prior site investigation data, it is anticipated that the majority of the subsurface elements of the former MGP structures remain in place. Structures with subsurface elements that are expected to be encountered during removal activities include portions of the following:

- Sludge pit
- Base of the gas relief holder
- Tar storage tank
- Oil storage tank
- Settling sump
- Exhauster building foundation
- Boiler house foundation
- Intercepting sump
- Tar and oil pump house foundation

Removal of these subsurface structures is expected to be necessary, in most instances, to facilitate excavation of MGP source material as described in Section 4.4. It is anticipated that most or all of the former MGP structures within the proposed excavation area will be removed by standard excavation techniques. However, if it is determined that one or more structures is not practical to remove, steps will be taken to assess the potential impact leaving such structure would have on meeting the objectives stated in the RAWP Addendum 1 Rev. 1. Where practical, a visual inspection will be made to determine the nature of any MGP source material that would remain in place should the structure not be removed. If the structure in question exhibits characteristics that indicate it is MGP source material, or potentially contains or physically impedes access to additional MGP source material, measures will be taken to limit the extent of potential future migration of impacts. These measures may include application of in-situ remediation products and/or the placement of physical barriers. In the event that structures are encountered that extend beyond the removal action area (i.e., straddle the project limits of Parcel L), their location will be documented. The remnant structures within Parcel L will be removed to the extent practicable. Those portions of structures that extend beyond the project limits may be left in place and will be addressed to limit the extent of future migration of MGP impacts as discussed above.

2 SUMMARY OF SITE CONDITIONS

2.1 Site Geology and Hydrogeology

The general geological setting of Parcel L is described in the RAWP Rev. 1, Section 2.1, page 9 as well as the Completion Report Rev. 0, Section 2.4, page 38 and Section 2.5, page 39. Details specific to Parcel L are as follows:

- Fill Unit - Asphalt gravel is present at the surface and is approximately 6 to 12 inches thick. The surficial fill unit ranges from 0 to 14 feet in thickness.
- Brown/Gray Silty Clay Unit - Underlying the fill unit is a brown/gray silty clay unit and is described in detail in the RAWP Rev. 1.
- Gray Silty Clay Unit - Underlying the brown/gray silty clay unit is a native gray silty clay unit. The top of the gray silty clay unit was encountered from 4 to 15 feet below ground surface (bgs).

A key site feature of Parcel L is the former West Fork of the South Branch of the Chicago River (West Fork) that historically traversed Parcel L diagonally from the southwest to the northeast. The former location of the West Fork is shown on Figure 5. According to test pit and soil boring data, portions of the former West Fork contain fill to depths of 19-20 feet. Based on available data, concentrations of MGP residuals do not appear as a continuous trend along and/or adjacent to the former channel. Additional characterization of the entire on-site reach of the former channel and its potential to represent a possible source of impacted fill material and/or a preferential migration pathway will be evaluated in conjunction with the Site-wide groundwater assessment as part of the RI/FS process.

2.2 Pre-Removal Site Characterization Activities and Findings

Pre-removal site characterization activities, which included advancement of soil borings, monitoring well installation, and test pit excavations, were conducted within the Parcel L RAA by NRT in June 2012.

NRT advanced 29 soil borings on Parcel L from June 6 through June 11, 2012. Boring locations are identified as LSB501 through LSB529 as shown on Figure 5. Soil boring logs are presented in Appendix B1. Six of the borings were converted to monitoring wells to assess the groundwater elevation and gradient to help in construction planning. Monitoring well construction details are included on the soil boring logs in Appendix B1.

A survey of the six newly constructed monitoring wells indicated that groundwater in the monitoring wells on Parcel L is at depths between 10.11 feet and 13.65 feet bgs. Groundwater elevations indicate that groundwater flows to the south. When present, groundwater in the fill appears to be perched. Consequently, depths to groundwater in the fill will depend on the fill thickness and/or depths to the clay till. Figure 6 illustrates the estimated groundwater elevation contours.

The Chicago Sanitary and Ship Canal, which lies approximately 1,725 feet south of the Parcel L RAA, is the closest surface water body and is located adjacent to Parcel S of the Site. According to the Illinois Environmental Protection Agency (IEPA), water quality within the Canal is generally poor. Survey stations located upstream and downstream of the Site indicate that the greatest impact to water quality is from fecal coliform concentrations due primarily to waste water treatment discharges.

In the vicinity of the Parcel L RAA, the ground surface is relatively flat. Water runoff is expected to flow toward low areas on Parcel L and infiltrate into the fill. The surface topography is shown on the Site Survey prepared by W-T Land Surveying and included in Appendix B3.

As part of NRT's 2012 investigation activities, soil samples were collected from discrete intervals for laboratory analysis of petroleum volatile organic compounds (PVOC) and gasoline and diesel range organics (TPH). A composite soil sample from the soil borings was collected and analyzed for landfill waste characterization parameters. Laboratory analytical reports from TestAmerica for these soil samples are presented in Appendix B2.

Test pit excavations, identified as TP-1 through TP-5, were conducted on June 5-7, 2012; their locations are illustrated on Figure 5.Test pits were completed to between eight and 23 feet bgs and were approximately six feet in width. Test pit TP-2 was allowed to remain open for approximately eight hours to observe the in-flow of groundwater in the excavation. Water was observed to level at approximately 11 feet bgs. Test pit logs are presented in Appendix B1.

2.3 Utilities and Site Constraints

2.3.1 Existing Utilities

Current site features at Parcel L were surveyed by W-T Land Surveying in May 2012. The survey is included in Appendix B3 and was reviewed to identify indications of underground utilities.

2.3.2 Site Ownership

PGL owns Parcel L.

2.4 Soil Data Compilation and Interpolation

Consistent with the general methodology described in the RAWP Rev. 1, Section 2.4, page 12, available data for Parcel L was evaluated as part of the removal action planning for purposes of:

1. Estimation of the extent of the excavation area. The excavation limits were estimated based on a combination of analytical soil data and descriptions of visually identified MGP source material in soil boring and test pit logs. Soil analytical data was used to correlate visual indicators of NAPL. The proposed removal action areas were verified and refined to include areas where TPH concentrations exceeded the default value of 2,000 mg/kg in accordance with the Tiered Approach to Corrective Action Objectives (TACO) regulations for determination of soil attenuation capacity (Illinois TACO: 35 IAC 742, Section 742.215). TPH as a sum of diesel and gasoline range organics was assumed to be representative of the primary constituents of potential concern (COPC) including benzene, toluene, ethylbenzene, xylenes (BTEX), and total PAHs. The visual descriptions of NAPL as well as associated analytical data were coordinated into a three-dimensional interpolation of the source material at each historic and recent soil probe and test pit location.

2. Targeting the soil amendment area within the established Parcel L RAA. The excavation was then subdivided into areas where soil will likely require amendment based on available data in order to satisfy disposal requirements for the selected Illinois Subtitle D landfill. Areas with similar descriptions of NAPL were included and were used to interpolate the three-dimensional volume of material that is expected to require amendment prior to off-site disposal.

The output includes the total volume of material to be removed from the Parcel L RAA. Excavation areas are presented in Figure 7 and discussed further in Section 3.3.

2.5 Characterization of Material for Disposal

Material was characterized using the same procedures detailed in the RAWP Rev. 1, Section 2.5, page 13 using information and data specific to the Parcel L RAA. The waste streams expected to be generated by the Parcel L removal action are consistent with those identified for the on-going removal activity at Parcels A, B, and O.

2.6 Risk to Public Health, Welfare or the Environment

Based on the historic site investigation data, and recent supplemental site characterization sampling, the conditions present at the Parcel L RAA may constitute an risk to public health, welfare, and the environment based upon the factors set forth in the National Contingency Plan (NCP) Section 300.415(b)(2). The potential risk posed could increase if PGL implements plans to increase the level of activity and frequency of use of Parcel L in the future. Selected factors that were deemed applicable to this determination are as follows:

1. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

   This portion of the Site is within an area used for industrial activities, but no active operations are conducted in the vicinity of any surface MGP residual materials. Typical security measures, including fencing, are employed, limiting any actual exposure.

   A potential exposure risk is present within the proposed Parcel L RAA because of the existence of MGP source material at the surface at multiple locations. Surface conditions consist predominantly of loosely packed gravel and asphalt grindings that do not provide a competent barrier to prevent exposure to the MGP source material. Further, MGP affected soils at depth have the potential to migrate and threaten additional receptors, such as groundwater and/or surface water. Notwithstanding, the mobility of the MGP residuals in subsurface soils is considered low.

2. Elevated levels of hazardous substances or, pollutants or contaminants in soils at or near the surface that may migrate.

   As stated above, MGP residuals meeting the classification of source material were identified in surface soils. In order to quantify the surface impacts at Parcel L, two additional surface soil samples were collected. Surface samples PCLSS121015001 (0 to 0.5 feet bgs) and PCLSS121015002 (0 to 0.5 feet bgs) were collected at the locations shown on the attached Figure 1 and analyzed for Total Petroleum Hydrocarbons. Surface samples PCLSS121015001 and PCLSS 121015002 exceeded the default values for soil attenuation capacity (6,000 mg/kg in surface soils and 2,000 mg/kg for subsurface soils) with concentrations of 24,080 mg/kg and 19,000 mg/kg, respectively.

   A quantitative risk assessment of the detected concentrations of the constituents of concern was not conducted as part of prior investigations or during the preparation of this Addendum.

Given the conditions at Parcel L, the nature of the known and suspected hazardous substances, pollutants, or contaminants within the Parcel L RAA, and the potential exposure pathways described above, actual or threatened releases of hazardous substances, pollutants or contaminants from the Parcel L RAA are evident. Removal of these MGP source materials will effectively mitigate the direct contact exposure pathway and reduce the potential for migration to soil, groundwater, or surface water. If

not addressed by implementing the response actions selected in this Addendum, or by another comparable mitigation method, these conditions pose a potential risk to public health, welfare, and/or the environment.

3 BASIS FOR REMOVAL ACTION

3.1 Removal Action Objectives and Strategy

The expanded Removal Action is being conducted to accomplish the overall objectives described in the RAWP Rev. 1, Section 3.1, page 15.

3.2 MGP Source Material Definition

See the RAWP Rev. 1, Section 3.2, page 16 for information regarding the definition of MGP source material.

3.3 Removal Action Decision Criteria

Removal action decision criteria will be consistent with those presented in the RAWP Rev. 1, Section 3.3, page 17. For Parcel L, excavation depths are planned in selected locations to approximately 29 feet bgs as shown on Figure 7.

3.4 Estimated Removal Volume

Based on the project objectives and decision criteria, the approximate lateral and vertical extents of MGP source material to be removed for this portion of the site are shown on Figure 7. Details of the removal plan are presented in Section 4. The total volume of MGP source material planned for off-site disposal is estimated to be between approximately 280,000 and 310,000 cubic yards (450,000 and 500,000 tons).

4 REMOVAL ACTION IMPLEMENTATION

This section describes the components of the removal action plan that will be implemented within the designated Parcel L RAA of the Crawford Station MGP site.

4.1 Preliminary Activities

4.1.1 Site Security and Controls

PGL currently maintains a gated and secured entrance to its facility at 4201 West 35th Place, Chicago, Illinois. This secured entrance will serve as an access point to the Parcel L RAA.

All visitors will be required to sign a visitor's log when entering and exiting the Parcel L RAA. Access to active construction areas will be limited to authorized personnel approved by IBS who will be required to participate in a site-specific health and safety briefing by the site supervisor or health and safety officer prior to entry.

4.1.2 Surveying

See the RAWP Rev. 1, Section 4.1.2, page 19 for information regarding surveying.

4.2 Site Preparation

Site preparation will include protection of utilities to remain in-place, installation of erosion controls, and establishing a truck route at Parcel L, including construction of an on-site temporary truck access road. Concrete barricades or steel traffic bearing plates will be placed around or on the wells. These activities are discussed further below and illustrated on Figure 8.

4.2.1 Protection of Utilities and Construction Utilities

Several underground utilities are located within the Parcel L RAA. Coordination with all utility providers is required to protect the utilities which will remain in-place during excavation activities. Discussions with PGL, Chicago Department of Water Management, and the Metropolitan Water Reclamation District of Greater Chicago on a proposed plan for protection of the utilities will be completed in advance of the initiation of the project.

Field modification may be necessary based on subsurface conditions encountered during construction. If utility modifications are necessary, PGL will coordinate with the utility provider. Additionally, coordination with utility providers will also occur to facilitate installation of utility services necessary for the construction operations. The construction operations will require, at a minimum, electrical and communication services for office trailers. In addition, the contractor's site superintendent will be tasked with ensuring all utility conflicts are cleared as the excavation activity progresses. In the event that ISCO or EISB is used, special care will be taken to avoid application in proximity to sensitive utilities.

4.2.2 Runoff and Erosion Control

See RAWP Rev. 1, Section 4.2.2, page 20 for information regarding general erosion and site controls. Silt fence will be placed along the property boundary.

4.2.3 Clearing and Grubbing

See RAWP Rev. 1, Section 4.2.3, page 22 for information regarding clearing and grubbing. Very limited clearing and grubbing activity is anticipated for Parcel L.

4.2.4 Route of Ingress and Egress for Construction

Ingress and egress routes to the Parcel L RAA will be established through gates located at the northern and southern property boundaries. At the gates, appropriate signage will be posted to identify entrances and exits. All trucks will be covered and covers will be securely fastened before leaving the Parcel L RAA.

4.3 Fugitive Emission Control

See RAWP Rev. 1, Section 4.3, page 22 for information regarding fugitive emission control. In addition to the controls measures listed in the RAWP Rev. 1, an odor mitigation system may be utilized to control fugitive emissions, if needed.

4.4 Removal Action Operations

Removal action operations will consist of the following elements as described in this section:

- Shoring
- Targeted Excavation
- On-site Materials Management

- Excavation Dewatering
- Equipment Decontamination

4.4.1 Shoring

For purposes of excavation stability, a sheet pile wall will be installed along the northern, western, and southern boundaries of Parcel L where the excavation area extends to these boundaries, as shown on Figure 8. An approximate 1,500 foot long sheet pile wall will be constructed immediately inside the fence line to allow removal of MGP source material. At project completion, the sheet piles will be left in place as a vertical barrier to demark the removal area along the property boundary.

In addition, sloping of banks along the perimeter of the Parcel L RAA will be required to stabilize excavation side walls as necessary to complete the excavation. Slope cutbacks will be in accordance with applicable industry standards and OSHA requirements.

4.4.2 Targeted Excavation

Excavation will continue to Parcel L RAA to achieve removal of MGP source material as defined in the RAWP Rev 1. The anticipated excavation area for this portion of the site is shown on Figure 7.

Overall this portion of the excavation process will occur in a staged progression, designed to effectively achieve removal goals but minimize duration of open excavations and allow for adequate access to the target removal areas. Phasing and sequencing of work will be further developed during the final design phase of the removal action. During excavation activities materials will be visually inspected for MGP residuals and segregated into four categories:

- Non-MGP impacted construction debris (i.e., pavement, concrete, etc.)
- MGP source material
- MGP source material at or above the Subtitle D landfill permit limits
- Overburden material

4.4.2.1 Non-MGP Impacted Construction Debris

According to historic data, more structures and construction debris will be encountered during removal activities at Parcel L than were encountered at Parcels A, B, and O. Structures and construction debris with limited to no MGP impacts may be crushed and used to backfill the excavation area. Structures and construction debris that is not reused at Parcel L will be transported off-site for disposal.

4.4.2.2 MGP Source Material

MGP source material will be directly loaded from the excavation to trucks for transport off-site or will be temporarily stockpiled within excavation areas to facilitate efficient loading of trucks. MGP source material will be transported by covered truck to an approved disposal facility as identified in Section 5.3.

4.4.2.3 MGP Source Material at or above the Subtitle D Landfill Permit Limits

Of the total volume of MGP source material, a portion representing an estimated 25,000 to 30,000 cubic yards is expected to require on-site soil amendment. Based on experience gained during removal activities on Parcels A, B, and O, bed ash is anticipated to be the preferred amendment material.

Following amendment, a representative sample will be collected for laboratory analysis to confirm amended soils satisfy landfill acceptance criteria for the Subtitle D facility. All laboratory analytical reports will be provided to the landfill, as necessary, for approval prior to transporting materials off-site.

4.4.2.4 Overburden Material

See RAWP Rev. 1, Section 4.4.2.4, page 25 for information regarding the handling of overburden material.

4.4.3 On-site Materials Management

See RAWP Rev. 1, Section 4.4.3, page 26 for information regarding on-site management of materials.

4.4.4 Excavation Dewatering

See RAWP Rev. 1, Section 4.4.4, page 27 for information regarding dewatering the excavation area.

4.4.5 Equipment Decontamination

See RAWP Rev. 1, Section 4.4.5, page 28 for information regarding decontamination of equipment.

4.5 Site Restoration

See RAWP Rev. 1, Section 4.5, page 28 for information regarding restoration of Parcel L after removal activities.

5 STATE AND LOCAL REQUIREMENTS

5.1 Storm Water Discharge

Refer to the RAWP Rev. 1, Section 5.1, page 30 for details of the storm water discharge procedures.

5.2 Governmental Coordination

See RAWP Rev. 1, Section 5.2, page 30 for information regarding coordination with governmental agencies.

5.3 Off-Site Disposal

MGP-impacted debris and soil is planned to be profiled and disposed at Waste Management's Laraway Refuse Disposal Facility (RDF), located in Elwood, Illinois, a Subtitle D landfill. This facility has received similar MGP waste from the initial ongoing Removal Action activities at Parcels A, B, and O. The Laraway facility has been approved by USEPA with respect to the Off-Site Rule.

As an alternate disposal option, MGP-impacted debris may be disposed of at Waste Management's Countryside Landfill, located in Grayslake, Illinois, an operating Subtitle D facility, or their CID RDF, located in Calumet City, Illinois, a closed Subtitle C landfill currently approved to accept non-hazardous MGP wastes for bioremediation. The Countryside and CID RDF facilities have been confirmed to be in compliance with the Off-Site Rule for disposal of waste as set forth in the NCP Section 300.440.

6 CONSTRUCTION QUALITY ASSURANCE MEASURES

This section describes the following principal construction quality assurance measures that will be employed during the removal action.

- Air Monitoring
- Fugitive Emissions Management Plan
- Health and safety
- Sampling and analysis

6.1 Air Monitoring Plan

Removal action activities have the potential to generate emissions, including odor, fugitive respirable particulate matter less than 10 µm in diameter (PM_{10}), and vapor phase COPCs. Potential emission sources include the following:

- Soil Excavation: Potential emissions consist of VOC vapors and fugitive dust during soil excavation and loading into trucks.
- Excavated Material Management: Potential emissions consist of fugitive dust and/or vapor/odor emissions from stockpiles and during material handling.

Pre-construction air monitoring will be performed to document background levels of particulates and vapor phase COPCs at Parcel L. Air monitoring will be conducted at the perimeter of Parcel L during removal action activities to ensure engineering measures are being protective of public health and the environment, and to determine when response actions are warranted. Specific air monitoring elements will include, but not be limited to:

- Establishing a dedicated continuously operated weather station at Parcel L to monitor meteorological conditions.
- Collecting pre-construction background air samples to establish baseline ambient air concentrations.
- Continuously monitoring total volatile organic hydrocarbons (TVOC) and PM_{10} with fixed air monitoring (FAM) stations at the parcel perimeter for comparison with pre-defined limit (i.e., Action Level).

- Monitoring benzene concentration at FAM stations when TVOC levels exceed a pre-defined limit (i.e. Action Level).
- Collecting 24-hour time-weighted SUMMA canister samples along the parcel perimeter during active construction. SUMMA canisters will be used to collect 24-hour time-weighted average samples for VOC and naphthalene analysis. Results will be averaged and compared to the site-specific risk-based acceptable air concentrations (AACs) presented in Appendix C.
- Collecting 24-hour time-weighted polyurethane foam (PUF) samples along the parcel perimeter during active construction. PUF samples will be used to collect 24-hour time-weighted average samples for PAH analysis. Results will be averaged and compared to the site-specific risk-based AACs presented in Appendix C.

6.1.1 Real-Time Perimeter Air Monitoring

Real-time air monitoring for TVOCs and PM_{10} will be conducted continuously along the parcel perimeter at FAM stations. The intent of the real-time monitoring program is to provide early detection of short-term emissions and potential off-site migration of TVOCs and PM_{10} related to the removal actions. Real-time FAM stations will operate 24 hours per day, seven days per week, during periods of removal action activity. The real-time perimeter air monitoring system will consist of FAM stations that will be supported by a central computer and alarm notification system.

The FAM stations will be programmed to measure 15-minute average TVOC and PM_{10} concentrations. Each station will include equipment programed to measure benzene concentration if the 15-minute TVOC average exceeds the Action Levels described in Section 6.1.4. The FAM stations will transmit data in real-time to a central computer via wireless radio telemetry. The central computer will be programed to compare the TVOC and PM_{10} 15-minute averages to the Action Level. If an Action Level is exceeded, an alarm will display on the central computer and a text message will be automatically sent to a predetermined individual(s).

6.1.2 Time Weighted Average (24-Hour) Perimeter Air Monitoring

The proposed air sampling strategy is divided into three categories: background monitoring, full-scale startup, and full-scale operations. Each category has distinct sampling frequencies and quantity requirements. Frequencies and quantities may be revised during construction depending on conditions. Sampling requirements include the following:

- Background: prior to startup of full-scale operations, background air sampling and monitoring will be conducted to establish baseline concentrations for comparison with AACs. In addition to continuous real-time monitoring with the FAMs, 24-hour SUMMA and PUF sampling will be performed at upwind and downwind locations along the parcel perimeter. The SUMMA

samples will be analyzed for BTEX and naphthalene via USEPA Method TO-15. The PUF samples will be analyzed for seven non-volatile PAHs with site-specific AACs via USEPA Method TO-13A.

- Full Scale Startup: during approximately the first two months of full-scale operation, 24-hour SUMMA samples will be collected at upwind and downwind locations along the parcel perimeter three times per week. 24-hour PUF samples will be collected at upwind and downwind locations along the parcel perimeter a minimum of once per week. Priority (3-day) laboratory turnaround will be requested for rapid assessment of the analytical results. The duration of the Full-Scale Startup period may be decreased or extended based on site-specific conditions that could include weather and work activities being performed.

- Full-Scale: during the remaining duration of full-scale operations, 24-hour SUMMA samples will be collected twice per week at upwind and downwind locations along the parcel perimeter. PAH data will be collected with 24-hour PUF samples at upwind and downwind locations along the parcel perimeter once per week or may be monitored indirectly by measuring the PM_{10} concentration (i.e., using real-time monitor), rather than using PUF samplers as described in Appendix C.

- With the exception of full-scale startup, samples will be analyzed within the 14-day holding time unless real-time monitoring results indicate that the sample analysis should be expedited to evaluate potential on-site exceedances of AACs.

- Upwind and downwind samples will be located along the parcel perimeter based on removal action activities, accessibility, receptors, and weather conditions.

- Field duplicates for the SUMMA canisters and PUF samples will be collected at a frequency of one per 20 samples. Duplicates will be obtained by collecting two concurrent samples from a single location and having both analyzed by the laboratory.

6.1.3 Assessment of Meteorological Conditions

An on-site meteorological station will be used to measure wind speed, wind direction, relative humidity, ambient air temperature, and barometric pressure. Data will be relayed to a dedicated computer that will receive continuous meteorological data and compute a 5-minute running average of the wind speed and direction. The 5-minute running average wind direction will be used to identify upwind and downwind sample locations and to monitor off-site receptors. The information will be stored electronically and included in daily reports. Average daily temperatures and barometric pressures will be used to calculate 24-hour time-weighted average air sample volumes for the SUMMA canisters and PUF samples. Meteorological data may also be obtained from the National Data Buoy Center (Chicago Station CHII2) or the National Weather Station at Midway Airport (KMDW) in the event of a malfunction of the on-site station.

6.1.4 Action Levels

Action Levels will be used as a screening tool to manage construction activities to minimize the potential for off-site emissions. Action levels are generally constrained by detection limits of the field monitoring equipment. In addition, action levels are selected at appropriate levels to avoid triggering a concern from ambient air concentrations (e.g., exhaust from nearby parked cars) versus concerns that could be resulting from removal action operations. Exceedance of an Action Level at the parcel perimeter will require a response action for vapor phase, particulate, and/or odor mitigation based on the conditions presented in Section 6.2.1. The effectiveness of the Action Levels to maintain off-site vapor phase emissions below the AACs will be assessed during the full-scale startup and may be adjusted, as appropriate. Proposed Action Levels for periodic real-time perimeter monitoring are summarized in the table below:

Action Levels

Parameter	Action Level
TVOCs	0.5 ppm greater than background (15-minute average concentration)
Benzene	0.5 ppm
PM_{10}	0.15 mg/m^3 greater than background (15-minute average concentration)

These action levels are based on the following:

- The proposed action levels for TVOCs and benzene have been used at other MGP sites to effectively predict compliance with AACs and what can be reliably measured by the proposed equipment.
- The proposed action level for benzene is based on the on the California EPA Reference Exposure Level for acute 6-hour exposure of 0.4 ppm.
- The proposed action level for PM10 is based on previously demonstrated performance at other MGP sites.

6.2 Fugitive Emissions Management Plan

See RAWP Rev. 1, Section 6.2, page 35 for information regarding the management of fugitive emissions.

6.3 Health and Safety Plan

See RAWP Rev. 1, Section 6.3, page 37 for information regarding the Site-Specific Health and Safety Plan (SSHASP) for ongoing removal activities at the Crawford Station MGP site. The SSHASP will be updated as appropriate to reflect the location of Parcel L and other site-specific characteristics. A copy of the updated SSHASP will be provided to USEPA upon request.

6.4 Sampling and Analysis Plan

See RAWP Rev. 1, Section 6.4, page 38 for information regarding the sampling and analysis plan for the Parcel L removal action. The plan is summarized in Table 1.

7 SCHEDULE

7.1 Schedule for Construction

Construction activities are tentatively scheduled to begin in November 2012, immediately following completion of remediation activities on Parcels A, B, and O and subject to USEPA's review and approval of this Addendum and governmental approvals. Property access and contractor availability are not expected to be constraints with respect to the project schedule; however, weather conditions may influence the production rate of the excavation work. IBS will keep USEPA updated on the work progress and schedule modifications through weekly progress reports.

The table below summarizes the anticipated construction schedule based on the planned scope of work described herein.

Preliminary Construction Schedule

Activity	Duration (Weeks)
Target Project Start Date	November 2012
Mobilization / Site Preparation	3
Excavation/Transport/Disposal	56
Backfill Operations	12
Site Restoration / Close Out	3
Contingency	10
Total Estimated Project Duration	84
Target Completion	Spring 2014

7.2 Removal Action Completion Report

A Removal Action Completion Report for the work outlined in this Addendum will be submitted to USEPA within 90 days following restoration of the Site to document the work performed.

8 REFERENCES

Hansen Engineers, Inc., 1992, *Preliminary Site Investigation - Crawford Station Gas Production and Storage Facility,* Chicago, Illinois.

Burns & McDonnell, 2003, *Site Investigation Sampling Data, Parcel L.* Chicago, Illinois.

Kolata, Dennis R. and Nimz, Cheryl K, 2010, *Geology of Illinois.* Illinois State Geological Survey, Champaign, Illinois.

Lineback, J.A., 1979, *Quaternary Deposits of Illinois.* Illinois State Geological Survey, Champaign, Illinois. Scale 1:500,000.

Natural Resource Technology, Inc. September 6, 2011, *Removal Action Work Plan, Rev. 1 - Properties A, B & O, Chicago, Illinois.*

Natural Resource Technology, Inc., December 23, 2011, *Completion Report, Rev. 0, Crawford Station MGP Site, Chicago, Illinois.*

Natural Resource Technology, Inc., March 14, 2012, *Site Specific Work Plan, Rev. 0, Crawford Station MGP Site, Chicago, Illinois.*

Prepared for Integrys, August 2, 2007, *Multi-Site Health and Safety Plan Revision 2.*

Prepared for Integrys Business Support, LLC, September 4, 2007, *Multi-Site Quality Assurance Project Plan Revision 2.*

Prepared for Integrys Business Support, LLC, September 8, 2008, *Multi-Site Field Sampling Plan Revision 4.*

Attachment 3

Administrative Record Index

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
CRAWFORD STATION FORMER MGP SITE
CHICAGO, COOK COUNTY, ILLINOIS

ORIGINAL
OCTOBER 12, 2011
(SDMS ID: 405568)

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	07/00/01	Burns & McDonnell	The Peoples Gas Light and Coke Company	Site Investigation Report for the Former Crawford Station Manufactured Gas Plant Properties A & B (XTRA Intermodal) **(SDMS ID: 405566)**	47
2	06/00/02	Burns & McDonnell	The Peoples Gas Light and Coke Company	Site Investigation Report for the Former Crawford Station Manufactured Gas Plant Property O **(SDMS ID: 405565)**	30
3	10/12/11	del Rosario, R., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or Welfare at the Crawford Station MGP Site (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED) **(SDMS ID: 405567)**	16

UPDATE #1
OCTOBER 31, 2012

1	10/19/12	Natural Resource Technology	U.S. EPA	Removal Action Work Plan Addendum 1 for the Former Crawford Station MGP Site (Revision 1)	233
2	00/00/00	del Rosario, R., U.S. EPA	Karl, R., U.S. EPA	Enforcement Action Memorandum: Request for Approval for Change in Scope at the Crawford Station Former MGP Site **(PENDING)**	